

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. **(Currently Amended)** A porous inorganic membrane having an external face and internal face, comprising at least one inorganic phase having separating properties, characterized in that it wherein the membrane has a carbon content representing 0.05% to 25% by weight with respect to the mass of said inorganic phase and in that the carbon is distributed in the pores of the membrane in an increasing graduated manner, so that the carbon content represents 1% to 3% by weight with respect to the mass of the first third of the inorganic phase having separating properties, 6% to 8% by weight with respect to the mass of the second third of the inorganic phase having separating properties and 15% to 20% by weight with respect to the mass of the third of the inorganic phase having separating properties, and provided that the membrane is free of any type of catalytic element in its porous network.
2. **(Original)** A porous inorganic membrane according to claim 1, characterized in that it has a carbon content representing 0.1% to 10% by weight with respect to the mass of said inorganic phase.
3. **(Original)** A porous inorganic membrane according to claim 2, characterized in that it has a carbon content representing 1% to 8% by weight with respect to the mass of said inorganic phase.
4. **(Currently Amended)** A porous inorganic membrane according to claim 1 selected from the group consisting of zeolitic membranes, modified zeolitic membranes, aluminosilicate membranes, silica membranes, alumina membranes and composite membranes having differing inorganic phases.

5. **(Previously Presented)** A porous inorganic membrane according to claim 1, characterized in that it is supported.

6. **(Currently Amended)** A porous inorganic membrane according to claim 1, having a pore size that is strictly less than 2 nm.

7. **(Previously Presented)** A porous inorganic membrane according to claim 1, having a pore size in the range of 2 to 50 nm.

8. **(Cancelled)**

9. **(Previously Presented)** A preparation process according to claim 18, in which said hydrocarbon feed is selected from the group consisting of olefins, polyolefins, acetylenes, polyacetylenes, aromatics, polyaromatics, molecules containing one or more aromatic nuclei with one or more hydrocarbon chains, hydrocarbon molecules containing heteroatoms and hydrocarbon molecules containing functionalized groups.

10. **(Previously Presented)** A preparation process according to claim 18, in which each of steps a) and b) is carried out at a constant temperature.

11. **(Previously Presented)** A preparation process according to claim 18, in which steps a) and b) are carried out using a non isothermal thermal program.

12. **(Previously Presented)** In a process separating non-condensable molecules with dimensions of less than 0.8 nm contained in a hydrocarbon feed, comprising contacting an external surface of a separating membrane, the improvement wherein the membrane is according to claim 1.

13. **(Previously Presented)** A process according to claim 12, in which said non-condensable molecules are selected from the group consisting of hydrogen, oxygen, helium, nitrogen, hydrogen sulphide H₂S, carbon monoxide CO, carbon dioxide CO₂ and methane.

14. – 17. **(Canceled)**

18. **(Currently Amended)** A process for preparing a porous inorganic membrane according to claim 1, comprising a step a) bringing a porous carbon-free inorganic membrane comprising at least one inorganic phase having separating properties into contact with a hydrocarbon feed at a temperature in the range 20°C to 550°C, followed by a step b) bringing the membrane from step a) into contact with a hydrocarbon feed at a temperature in the range of from more than 20°C to 550°C, the contact time in step a) being in the range of 1 minute to 3 days, the contact time in step b) being in the range of 1 minute to 2 days, the temperature employed in step b) being higher than that employed in step a), the pressure employed in steps a) and b) being in the range of 0.1 to 10 MPa, the membrane from step a) being maintained, before undergoing step b), at a temperature that is higher than that employed to carry out step a) for a period of 1 minute to 6 hours, the hydrocarbon flow rate being higher in step b) than in step a).